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NOTICE OF ALLOWANCE AND FEE(S) DUE

23389

7590

06/16/2009

SCULLY SCOTT MURPHY & PRESSER, PC
400 GARDEN CITY PLAZA
SUITE 300
GARDEN CITY, NY 11530

EXAMINER

AZARIAN, SEYED H

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 06/16/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,755	06/06/2005	Hirokazu Nishimura	18923	5452

TITLE OF INVENTION: IMAGE PROCESSING SYSTEM AND IMAGE PROCESSING METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/16/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

23389 7590 06/16/2009

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 400 GARDEN CITY PLAZA
 SUITE 300
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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/16/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
AZARIAN, SEYED H	2624	382-128000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB-122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB-47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 662 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 662 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

10/537,755

Applicant(s)

NISHIMURA ET AL.

Examiner

Seyed Azarian

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/12/2009 and telephone interview also fax inquiry filed on May 29, 2009.
2. ☒ The allowed claim(s) is/are 1,2,5-11,13-17,20 and 23-31 now renumbered as 1-24.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 5/6/08&6/6/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

/Seyed Azarian/
Primary Examiner, Art Unit 2624

Response to Amendment

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 4/13/2009 has been entered.

2. Based on applicant's amendment, filed 3/12/2009, see page 10 through 13 of the remarks, also telephone interview and fax inquiry filed on May 29, 2009, with respect to cancellation of claims 3, 4, 12, 18, 19 and 21-22, and amended claims 1, 10, 13, 17, 20, 23, 24, 26 and 30, have been fully considered and are persuasive, upon further consideration the 35 USC 101 rejection and rejection, of 103(a) for claims 1-2, 5-11, 13-17, 20 and 23-31, are hereby withdrawn.

The claims 1-2, 5-11, 13-17, 20 and 23-31 now renumbered as 1-24 are allowed.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it must be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicants Attorney (Mrs. Katherine R. Vieyra, Reg No. 47,155), on May 29, 2009, without traverse.

The amended claims 1, 10, 13, 17, 20, 23, 24, 26 and 30 as follows:

Cancel claims 3, 4, 12, 18, 19, 21 and 22.

Claim 1. (Currently Amended) An image processing method comprising:

an input step of inputting an image;

an extraction step of performing matching between a template, obtained by modeling a predetermined structural component in the image, and the image input in the input step to extract a structural component as an extraction target in the image; and

an evaluation step on a processor of setting a plurality of different templates of the structural components to evaluate a result of matching using the different templates, wherein the structural component is extracted on the basis of the evaluation result in the evaluation step, and each of the different templates is determined on the basis of the number of pixels corresponding to a width of the structural component and a magnitude of variation in the width.

Claim 10. (Currently Amended) An image processing method comprising:

an input step of inputting an image;

a first extraction step on a processor of performing a first region extraction process to the image input in the input step to extract a first region group including one or more regions; and a

second extraction step on the processor of performing a second region extraction process for every region included in the first region group,

wherein in the first extraction step, the region is extracted on the basis of a logical operation of a first binary image and a second binary image, the first binary image being based on a result of first filtering with first pass frequency band characteristic, the second binary image being based on a result of second filtering with second pass frequency band characteristic.

Claim 13. (Currently Amended) claim 13, line 1, delete -- claim 12 --, after phrase “ The image processing method according to”, and line 1, insert -- claim 10 -- after phrase “The image processing method according to”.

Claim 17. (Currently Amended) An image processing method comprising:
a filtering step of performing first and second band pass filtering to an image;
a first binary image formation step on a processor of forming first and second binary images from the first and second band pass filtering results with first and second frequency band characteristics;

region group specification step on the processor of specifying a first region group including a structural component to be extracted in the image and a second region group including no structural component on the basis of logical operation for the first and second binary images;

a re-extraction step on the processor of again extracting a desired structural component from the first region group on the basis of the second region group specified in the region group specification step; and

a second binary image formation step on the processor of forming a binary image every region included in the first region group.

Claim 20. (Currently Amended) An image processing method comprising:

an input step of inputting an image;

an extraction step of extracting a predetermined structural component from the image input in the input step; and

a feature-amount calculation step on a processor of calculating an amount of feature based on a width of the structural component extracted in the extraction step,

wherein the extraction in the extraction step includes a binary image formation step of forming a binary image of the predetermined structural component in the image,

the width of the structural component is based on the result of a distance transform and skeleton process for the binary image, and

the amount of feature includes a numeric value to evaluate the magnitude of variation in the width of the structural component.

Claim 23. (Currently Amended) claim 23, line 1, delete -- claim 22 --, after phrase “ The image processing method according to”, and line 1, insert -- claim 20 -- after phrase “The image processing method according to”.

Claim 24. (Currently Amended) An image processing method comprising:

an input step of inputting an image comprising a plurality of color signals;

an extraction step of extracting desired structural components from at least two of the color signals constituting the image input in the input step; and

a calculation step on a processor of calculating the combination of amounts of feature based on the desired structural components extracted in the extraction step,

wherein the extraction in the extraction step includes a binary image formation step of forming a binary image of the predetermined structural component in the image,

the width of the structural component is based on the result of a distance transform and skeleton process for the binary image, and

the amount of feature includes a numeric value to evaluate the magnitude of variation in the width of the structural component.

Claim 26. (Currently Amended) An image processing method comprising:

an input step of inputting an image including a plurality of color signals;

an extraction step of extracting desired structural components from at least two of the color signals constituting the image input in the input step;

a combination step on a processor of combining the structural components extracted in the extraction step; and

a calculation step of calculating the amount of feature based on the combination result in the combination step,

wherein the extraction in the extraction step includes a binary image formation step of forming a binary image of the predetermined structural component in the image,

the width of the structural component is based on the result of a distance transform and skeleton process for the binary image, and

the amount of feature includes a numeric value to evaluate the magnitude of variation in the width of the structural component.

Claim 30. (Currently Amended) An image processing system comprising:
an input unit for inputting an image;
an extraction unit for performing matching between a template, obtained by modeling a predetermined structural component in the image, and the image input in the input unit to extract a structural component serving as an extraction target in the image; and
an evaluation unit for setting a plurality of different templates of the structural components to evaluate a result of matching using the different templates, wherein
the structural component is extracted on the basis of the evaluation result in the evaluation unit, and each of the different templates is determined on the basis of the number of pixels corresponding to a width of the structural component and a magnitude of variation in the width.

REASONS FOR ALLOWANCE

4. The following is an examiner's statement of reasons for allowance.

This invention relates generally, to an image processing method for performing image processing to an endoscopic image in order to easily evaluate the amount of feature.

Based on applicant's amendment, with respect to claim 1 representative of claim 30 the closest prior art of record (Kato and Kobayashi), Kato reference is directed to an image processing apparatus and method preferably applicable to a video communication apparatus in a video conference system or the like using video and audio data. Kobayashi reference is directed to an electronic endoscope system, and, in particular, is directed to the development of an electronic endoscope system in which a region of an organ of a human body is indicated during medical examination of the organ using the electronic endoscope system, but neither Kato nor Kobayashi teach or suggest, among other things, "an evaluation step on a processor of setting a

plurality of different templates of the structural components to evaluate a result of matching using the different templates, wherein the structural component is extracted on the basis of the evaluation result in the evaluation step, and each of the different templates is determined on the basis of the number of pixels corresponding to a width of the structural component and a magnitude of variation in the width”.

Additionally claim 10 representative of claim 17, the closest prior art of record (Kato and Kobayashi) do not teach or suggest, among other things, “a second extraction step on the processor of performing a second region extraction process for every region included in the first region group; wherein in the first extraction step, the region is extracted on the basis of a logical operation of a first binary image and a second binary image, the first binary image being based on a result of first filtering with first pass frequency band characteristic, the second binary image being based on a result of second filtering with second pass frequency band characteristic”.

Further claim 20 representative of claims 24 and 26, the closest prior art of record (Kato and Kobayashi) do not teach or suggest, among other things, “ wherein the extraction in the extraction step includes a binary image formation step of forming a binary image of the predetermined structural component in the image, the width of the structural component is based on the result of a distance transform and skeleton process for the binary image, and the amount of feature includes a numeric value to evaluate the magnitude of variation in the width of the structural component”.

These key features in combination with the other features of the claimed invention are neither taught nor suggested by (Kato and Kobayashi) prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (571) 272-7443. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR. Status information about the PAIR system, see [http:// pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Seyed Azarian/

Primary Examiner, Art Unit 2624

May 30, 2009